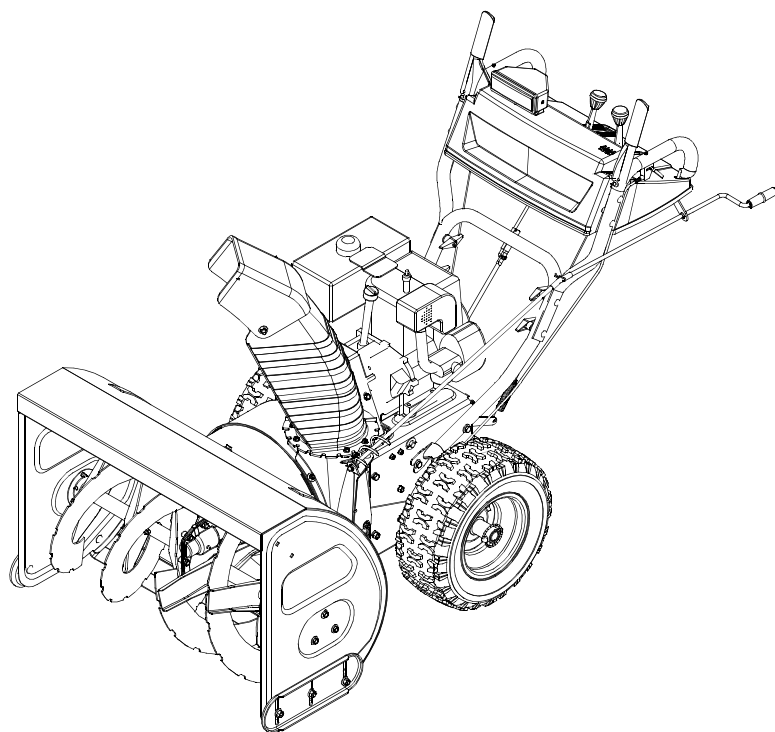




# OPERATOR'S MANUAL

## 33" Snow Thrower

Model 31AE993I401



### IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

**Warning:** This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

**MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722**

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## FINDING MODEL NUMBER

This Operator's Manual is an important part of your new snow thrower. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



**Before you start to prepare your snow thrower** for its first use, please locate the model plate and copy the information from it in this Operator's Manual. The information on the model plate is very important if you need help from your dealer or the Customer Support Department.

You can locate the model number by looking at the lower frame cover on the rear of your snow thrower. A sample model plate is explained below. For future reference, please copy the model number and the serial number of the equipment in the space below.

(Model Number)

(Serial Number)

**MTD PRODUCTS INC**  
CLEVELAND, OHIO 44136

Copy the model number here: \_\_\_\_\_

Copy the serial number here: \_\_\_\_\_

## CALLING CUSTOMER SUPPORT

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.



Call **1- (330) 220-4MTD (4683)** or **1- (800)-800-7310** to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call.

For more details about your unit, visit our website at [www.yardman.com](http://www.yardman.com)

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## SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—**heed its warning**.



**WARNING:** Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to State of California to cause cancer and birth defects or other reproductive harm.



**DANGER:** This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

### Training

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Thrown objects can cause serious personal injury. Plan your snow throwing pattern to avoid discharge of material toward roads, bystanders and the like.
6. Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
7. Exercise caution to avoid slipping or falling, especially when operating in reverse.
7. Never attempt to make any adjustments while engine is running, except where specifically recommended in the operator's manual.
8. Let engine and machine adjust to outdoor temperature before starting to clear snow.
9. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.
  - a. Use only an approved gasoline container.
  - b. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
  - c. Never fuel machine indoors.
  - d. Never remove gas cap or add fuel while the engine is hot or running.
  - e. Allow engine to cool at least two minutes before refueling.
  - f. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
  - g. Replace gasoline cap and tighten securely.
  - h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
  - i. Never store the machine or fuel container inside where there is an open flame, spark or pilot light (e.g. furnace, water heater, space heater, clothes dryer etc.).
  - j. Allow machine to cool 5 minutes before storing.

### Preparation

1. Thoroughly inspect the area where the equipment is to be used. Remove all door mats, newspapers, sleds, boards, wires and other foreign objects which could be tripped over or thrown by the auger/impeller.
2. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
3. Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing which could become entangled in moving parts. Wear footwear which will improve footing on slippery surfaces.
4. Use a grounded three wire extension cord and receptacle for all units with electric start engines.
5. Adjust collector housing height to clear gravel or crushed rock surfaces.
6. Disengage all clutch levers before starting the engine.

### Operation

1. Do not put hands or feet near rotating parts, in the auger/impeller housing or discharge chute. Contact with the rotating parts can amputate hands and feet.
2. The auger/impeller clutch lever is a safety device. Never bypass its operation. Doing so, makes the machine unsafe and may cause personal injury.
3. The clutch levers must operate easily in both directions and automatically return to the disengaged position when released.
4. Never operate with a missing or damaged discharge chute. Keep all safety devices in place and working.

5. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
6. Do not operate machine while under the influence of alcohol or drugs.
7. Muffler and engine become hot and can cause a burn. Do not touch.
8. Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic.
9. Exercise caution when changing direction and while operating on slopes.
10. Plan your snow throwing pattern to avoid discharge towards windows, walls, cars etc. To avoid property damage or personal injury caused by a ricochet.
11. Never direct discharge at children, bystanders and pets or allow anyone in front of the machine.
12. Do not overload machine capacity by attempting to clear snow at too fast of a rate.
13. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles. Walk, never run.
14. Disengage power to the auger/impeller when transporting or not in use.
15. Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when in reverse.
16. If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating.
17. Disengage all clutch levers and stop engine before you leave the operating position (behind the handles). Wait until the auger/impeller comes to a complete stop before unclogging the discharge chute, making any adjustments, or inspections.
18. Never put your hand in the discharge or collector openings. Always use a clearing tool to unclog the discharge opening.
19. Use only attachments and accessories approved by the manufacturer (e.g. wheel weights, tire chains, cabs etc.).
20. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer or telephone 1-800-800-7310 for assistance and the name of your nearest servicing dealer.



## Maintenance And Storage

1. Never tamper with safety devices. Check their proper operation regularly.
2. Disengage all clutch levers and stop engine. Wait until the auger/impeller come to a complete stop. Disconnect the spark plug wire and ground against the engine to prevent unintended starting before cleaning, repairing, or inspecting.
3. Check bolts, and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage.
4. Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
5. Snow thrower shave plates and skid shoes are subject to wear and damage. For your safety protection, frequently check all components and replace with original equipment manufacturer's (O.E.M.) parts only. Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety.
6. Check clutch controls periodically to verify they engage and disengage properly and adjust, if necessary. Refer to the adjustment section in this operator's manual for instructions.
7. Maintain or replace safety and instruction labels, as necessary.
8. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
9. Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
10. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer etc.
11. Always refer to the operator's manual for proper instructions on off-season storage.



**WARNING: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.**



## SECTION 2: ASSEMBLING YOUR SNOW THROWER

**NOTE:** Any reference in this manual to the left or right side of the snow thrower is observed from the operator's position.

### Unpacking

- Remove staples from the top, sides, and ends of the shipping crate.
- Set panels aside to avoid tire punctures or personal injury.
- Remove and discard plastic bag that covers unit.
- Roll the unit out of the crate.
- Check the crate thoroughly for loose parts before discarding.

### Loose Parts

- The augers are secured to the auger shaft with two shear bolts and hex lock nuts. If you hit a foreign object or ice jam, the snow thrower is designed so that the bolts may shear. Two replacement shear bolts and nuts are provided for your convenience. Store in a safe place until needed. See Figure 1.

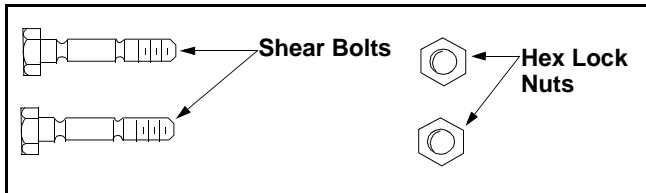


Figure 1

**IMPORTANT:** NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components from standard hex bolts will not be covered by your snow thrower's warranty.

### Assembling Handle



**WARNING:** Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.

**IMPORTANT:** Make any final adjustments, as instructed later on in this section, before operating your snow thrower. Failure to follow these instructions may cause damage to the snow thrower.

- Remove the **lower** plastic wing nut, cupped washer and carriage bolt from each side of the lower handle. See Figure 2.

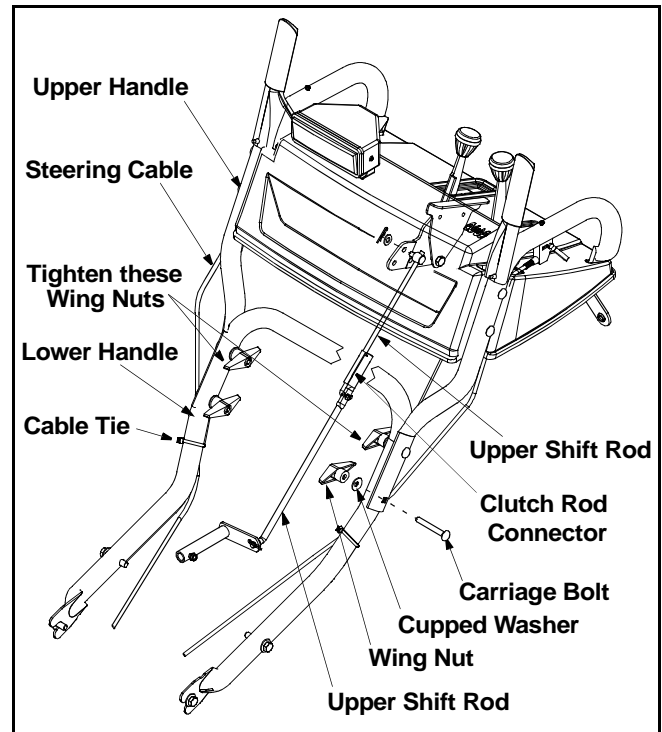


Figure 2

- Raise the upper handle assembly until it locks over the lower handle. See Figure 3.
- Look at the lower rear of the snow thrower frame to be sure all the cables are aligned with the cable roller guides.

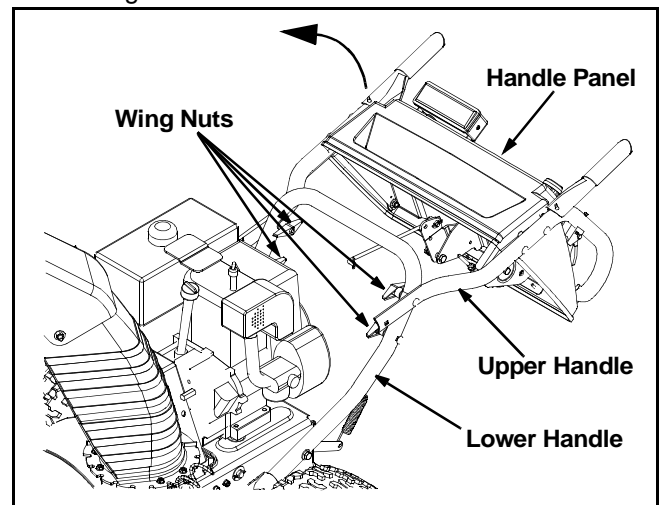


Figure 3

- Secure the upper handle and lower handle with the two plastic wing nuts, cupped washers and carriage bolts previously removed. Attach these hardware on the lower hole in the handles.
- Tighten the two wing nuts already in place on the upper holes and secure the handles firmly. Slide the shift rod connector down over the end of the lower

shift rod. Tap the connector until it **locks** over the lower shift rod. See Figure 2.

**NOTE:** If the connector is not properly assembled, the shift rod will pivot and you will not be able to change speeds or change directions.

- Remove the hairpin clip from the upper chute crank and slide the upper chute crank through the upper chute crank bracket and into the lower chute crank. Align the two holes on both chute cranks and insert the hairpin clip removed earlier, through these holes. See Figure 4.

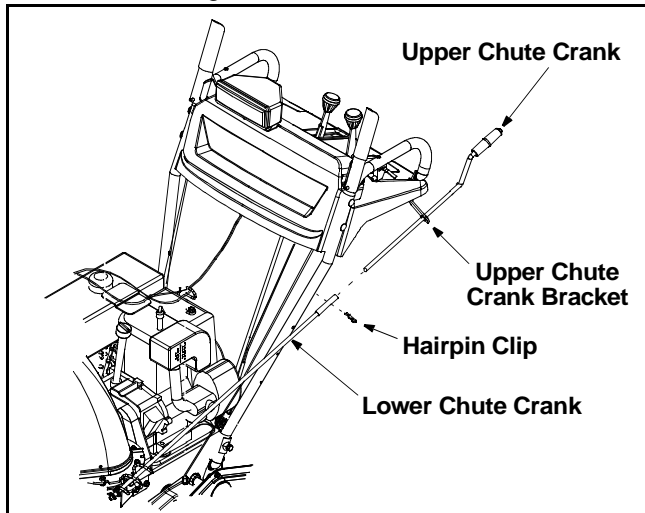


Figure 4

- If not already attached, slip the cables that run from the handle panel to the discharge chute into the cable guide located on top of the engine as shown in Figure 5.

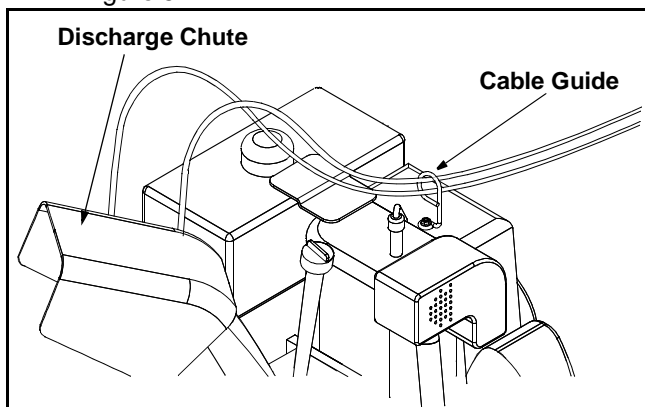


Figure 5

- Unwrap the headlight wire which is attached to the headlight, beneath the handle panel. Wind the headlight wire around the lower right handle until excess slack is removed. See Figure 6.
- Plug the wire from the headlight into the alternator lead coming from the right side of the engine underneath the fuel tank.

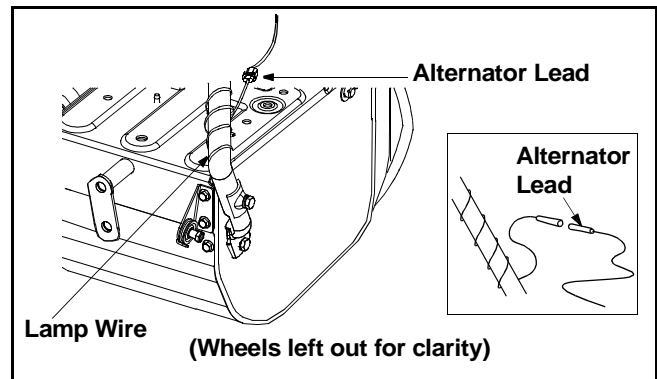


Figure 6

## Final Adjustments

**NOTE:** It may be helpful to read Section 3, *Knowing Your Snow Thrower*, to help identify certain areas of the snow thrower before performing adjustments.

### Traction Control and Shift Lever

To check the adjustment of the traction control and shift lever, proceed as follows:

- Move the shift lever into sixth (6) position.
- With the traction control released, push the snow thrower forward, then pull it back. The machine should move freely.
- Engage the traction control and attempt to move the machine both forward and back, resistance should be felt.
- Move the shift lever into the fast reverse (R2) position and repeat the previous two steps.

If you experienced resistance rolling the unit, either when repositioning the shift lever from 6 to R2 or when attempting to move the machine with the traction control released, adjust the traction control immediately. To adjust, proceed as follows:

- Loosen the jam nut on the traction control cable and UNTHREAD the cable one full turn.
- Recheck adjustment.
- Retighten the jam nut to secure the cable when correct adjustment is reached.

**NOTE:** For more details, refer to *Traction Control Adjustment*

### Auger Control

Check the adjustment of the auger control as follows:

- Push down on the auger control until the small rubber bumper contacts the upper handle. There should be a small amount of slack in the auger control cable.
- Release the auger control. The cable should be straight. Make certain you can depress the auger control against the left handle completely.

If adjustment is necessary, proceed as follows:

- Loosen the jam nut and thread the cable in (for less slack) or out (for more slack) as necessary. See Figure 7.
- Recheck adjustment; readjust as necessary and tighten the jam nut.

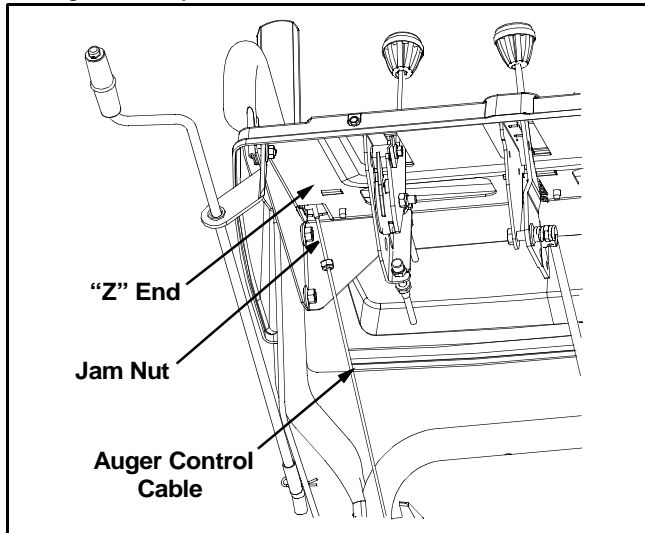


Figure 7

#### Skid Shoes

The space between the shave plate and the ground can be adjusted by repositioning the skid shoes. For close snow removal, as when using on a smooth concrete or asphalt driveway, place the skid shoes in the low position. Use the middle or high position when the area to be cleared is uneven. When operating on gravel, always put skid shoes in the high position. See Figure 8.

Adjust skid shoes as follows:

- Loosen, but do not remove, the three hex nuts which fasten the skid shoe to the auger housing.
- Raise or lower the skid shoe to desired position.
- Retighten the hex nuts loosened earlier.
- Repeat on the other side of the snow thrower.

**NOTE:** Make certain the entire bottom surface of skid shoe is against the ground to avoid uneven wear on the skid shoes.

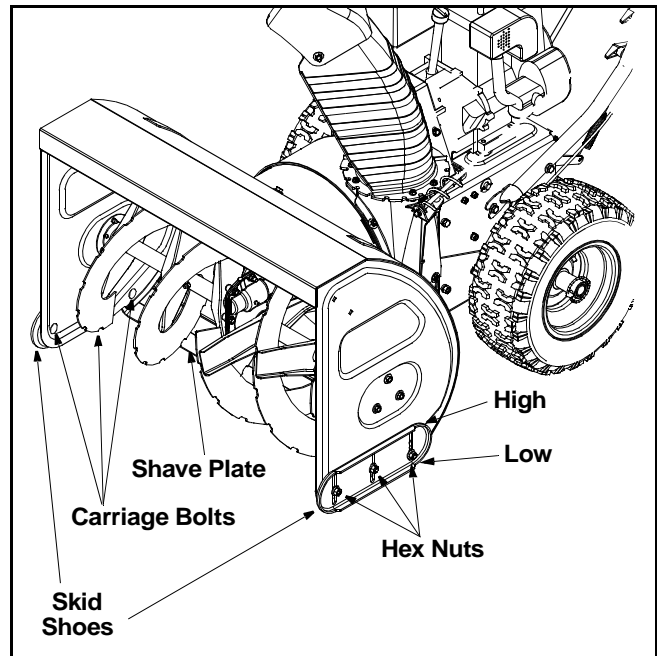


Figure 8

#### Tire Pressure (Pneumatic Tires)

The tires are overinflated for shipping purposes.

- Check tire pressure. Maintain pressure between 10 and 14 psi.

**NOTE:** If the tire pressure is not equal in both tires, the unit may pull to one side or the other.



**WARNING:** Maximum tire pressure under any circumstance is 30 psi. Equal tire pressure should be maintained at all times. Excessive pressure (over 30 psi) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

## SECTION 3: KNOWING YOUR SNOW THROWER



**WARNING:** Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

### Traction Control / Auger Control Lock

The traction control is located on the right handle. Squeeze the traction control to engage the wheel drive. Release to stop. See Figure 9.

This same lever also locks the auger control so you can operate the chute crank without interrupting the snow throwing process. If the auger control is engaged

simultaneously with the traction control, the operator can release the auger control (on the left handle) and the augers will remain engaged. Release the traction control to stop the augers and wheel drive (the auger control must also be released).

**IMPORTANT:** Always release the traction control before changing speeds.

### Auger Control

The auger control is located on the left handle. Squeeze the auger control to engage the augers. Release to stop the snow throwing action. The traction control must also be released in order to stop the auger.



## Shift Lever

The shift lever is located in the center of the handle panel and is used to determine ground speed and direction of travel. It can be moved into any of eight positions. See Figure 9.

**IMPORTANT:** Always release traction the control before changing speeds.

### Forward

Your snow thrower has six forward (F) speeds. Position number one (1) is the slowest and position number six (6) is the fastest.

### Reverse

Your snow thrower has two reverse (R) speeds. R1 is the slower, while R2 is the faster of the two.

## Chute Crank

The chute crank is located on the left hand side of the snow thrower. To change the direction in which snow is thrown, turn the chute crank as follows:

- Turn *clockwise* to discharge to the left;
- Turn *counterclockwise* to discharge to the right.

## Wheel Steering Controls

The left and right wheel steering controls are located on the underside of the handles and are used to assist in steering the snow thrower.

- Squeeze the right wheel steering control when turning right; squeeze the left control when turning left.

- Operate the snow thrower in open areas until becoming familiar with these controls.

## Chute Tilt Control

The distance snow is thrown can be changed by adjusting the angle of the chute assembly. Move the chute tilt control forward to decrease the distance, toward the rear to increase. See Figure 9.

## Discharge Chute

The angle of the discharge chute controls the distance that the snow is thrown. Tilt the discharge chute up for greater distance; tilt down for less distance.

## Skid Shoe

The position of the skid shoe is determined by the condition of the ground from where snow has to be removed.

## Headlight

The headlight is on whenever the engine is running.

## Throttle Control

The throttle control is located on the engine. It regulates the speed of the engine. See Figure 9.

## Safety Ignition Key

The safety ignition key must be fully inserted in the switch before the unit will start. Remove key when snow thrower is not in use. Do not attempt to turn the key. See Figure 9.

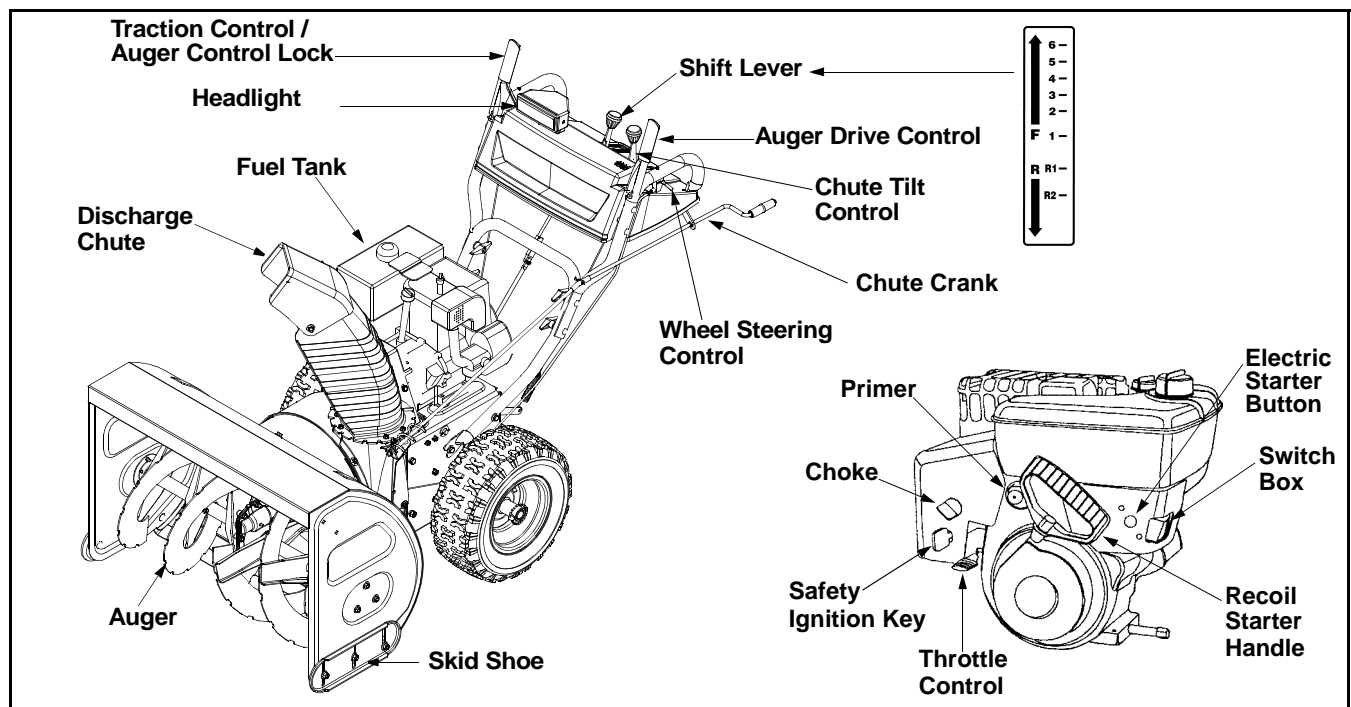


Figure 9



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## SECTION 4: OPERATING YOUR SNOW THROWER

### Before Starting



**WARNING:** Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

### Gas And Oil Fill-up

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your snow thrower. **Read instructions carefully.**



**WARNING:** Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

- A plastic cap is provided inside the fuel fill opening on the fuel tank. Remove and discard this cap before filling up the tank. Use the separate fuel tank cap to close after fill-up.

### To Start Engine

**NOTE:** If unit shows any sign of motion (drive or augers) with the clutch grips disengaged, shut engine off immediately. Readjust as instructed in the Final Adjustments in the Assembly Section.

- Attach spark plug wire to spark plug. Make certain the metal loop on end of the spark plug wire (inside the boot) is fastened securely over the metal tip on the spark plug.
- Make certain the auger and drive clutch levers are in the disengaged (released) position.
- Move throttle control up to FAST position. Insert ignition key into slot. See Figure 9. Be certain it snaps into place. **Do not turn key.**

**NOTE:** Engine will not start unless ignition key is inserted into ignition slot in carburetor cover.

### Electric Starter

- Determine that your house wiring is a three-wire grounded system. Ask a licensed electrician if you are not certain.



**WARNING:** The electric starter is equipped with a grounded three-wire power cord and plug and is designed to operate on 120 volt AC household current. It must be used with a properly grounded three-prong receptacle at all times to avoid the possibility of electric shock. Follow all instructions carefully prior to operating the electric starter.

- If your house wiring system is not a three-wire grounded system, do not use this electric starter under any conditions.
- If your home electrical system is grounded, but a three-hole receptacle is not available, one should be installed by a licensed electrician before using the electric starter.
- If you have a grounded three-prong receptacle, proceed as follows:
- Rotate choke knob to OFF position and do not prime engine.
- Connect power cord to switch box on engine. Plug the other end of power cord into a three-hole, grounded 120 volt AC receptacle.
- Push starter button on top of the engine to crank engine. As you crank the engine, move choke knob to FULL choke position.
- When engine starts, release starter button, and move choke gradually to OFF. If engine falters, move choke immediately to FULL and then gradually to OFF.
- When disconnecting the power cord, always unplug from the three-prong receptacle first and then from the snow thrower.

### Recoil Starter

- Rotate choke knob to FULL choke position (cold engine start). If engine is warm, place choke in OFF position instead of FULL.
- Push primer button two or three times. If engine is warm, push primer button once only.

**NOTE:** Always cover vent hole in primer button when pushing. Additional priming may be necessary for first start if temperature is below 15°F.

- Grasp starter handle and pull rope out slowly, until it pulls slightly harder. Let rope rewind slowly.
- Pull starter handle rapidly. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.
- Repeat the previous steps until engine starts.

## To Stop Engine

- Run engine for a few minutes before stopping to help dry off any moisture on the engine.
- To help prevent possible freeze-up of starter, proceed as follows.

### Electric Starter:

- Connect power cord to switch box on engine, then to 120 volt AC receptacle. With the engine running, push starter button and spin the starter for several seconds. The unusual sound made by spinning the starter will not harm engine or starter. Disconnect the power cord from receptacle first, and then from switch box.

### Recoil Starter

- With engine running, pull starter rope with a rapid, continuous full arm stroke three or four times. Pulling the starter rope will produce a loud clattering sound, which is not harmful to the engine or starter.
- Move throttle control to "stop" or "off" position.
- Remove ignition key. Do not turn key. Disconnect the spark plug wire from the spark plug to prevent accidental starting while equipment is unattended.

**NOTE:** *Keep it in a safe place. Engine will not start without ignition key.*

Wipe all snow and moisture from the carburetor cover in the area of the control levers. Also, move control levers back and forth several times.

## To Engage Wheel Drive

- With the engine running near top speed, move the shift lever into one of the six FORWARD positions or two REVERSE positions. Select a speed appropriate for the snow conditions that exist.

**NOTE:** *Use slower speeds in higher snow, and until you are familiar with the operation of the snow thrower.*

- Squeeze the traction control against the right handle and the snow thrower will move. Release it and the drive motion will stop.

**IMPORTANT:** NEVER move the shift lever without first releasing the traction control. Doing so will cause premature wear to the drive system's friction wheel.

## To Engage Augers

To engage the augers and start the snow throwing action, proceed as follows:

- Squeeze the auger control against the left handle. To disengage power to the augers:
- Release both the auger control and the traction control, if engaged.

The auger control can be locked so you can turn the electric chute directional control without interrupting the snow throwing process.

## Operating Tips

**NOTE:** *Allow the engine to warm up for a few minutes. The engine will not develop full power until it reaches operating temperature.*



**WARNING:** The temperature of the muffler and the surrounding areas may exceed 150° F. Avoid these areas.

- For the most efficient snow removal, remove snow immediately after it falls.
- Discharge the snow downwind whenever possible.
- Slightly overlap each previous path.
- Set the skid shoes 1/4" below the shave plate for normal usage. The skid shoes may be adjusted upward (to lower the shave plate) for hard-packed snow. Adjust downward (to raise the shave plate) when using on gravel or crushed rock.

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## SECTION 5: MAKING ADJUSTMENTS



**WARNING:** NEVER attempt to clean chute or make any adjustments while engine is running.

### Traction Control

Refer to the information found under Final Adjustment in the Assembly Section to adjust the traction control. If you are uncertain that you have reached the correct adjustment, proceed as follows:

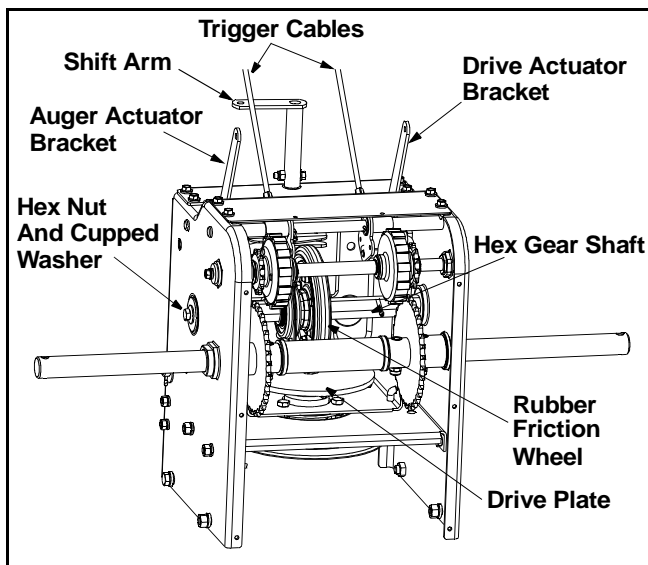


**WARNING:** Drain the gasoline out of your snow thrower's engine, and place a piece of plastic film under the gas cap to avoid spillage before beginning the job.

- Tip the snow thrower forward, allowing it to rest on the auger housing.
- Remove the frame cover underneath the snow thrower by removing six self-tapping screws.
- With the traction control released, make sure there is clearance between the friction wheel and the drive plate in all positions of the shift lever.
- With the traction control lever engaged, make sure the friction wheel solidly contacts the drive plate. See Figure 10.

If adjustment is necessary, adjust traction control as instructed below:

- Loosen the jam nut on the traction drive cable and thread the cable in or out as necessary. Refer to Figure 7.



**Figure 10**

- Retighten the jam nut to secure the cable when correct adjustment is reached.
- Reassemble the frame cover.

**NOTE:** If you placed plastic film under the gas cap, be certain to remove it before operating the snow thrower.

## Drive Wheels

The wheels may be adjusted for two different methods of operation. The adjustment is made by placing the click pins in one of two different holes on the right side of the unit.

**One Wheel Driving:** Insert the click pin only through the outside hole of the axle (NOT the rim) on the right side of the snow thrower. This position gives power drive to the left wheel only, making the unit easier to maneuver.

**Both Wheels Driving:** Insert the click pin through the hole in the hub of the rim and the INSIDE hole on the snow thrower's right axle. This position is good for heavy snow as there is power drive in both wheels.

**IMPORTANT:** NEVER operate the snow thrower with the click pin inserted through both the RIM and the OUTSIDE HOLE in the axle. Doing so can result in serious damage to the drive system.

## Shift Rod

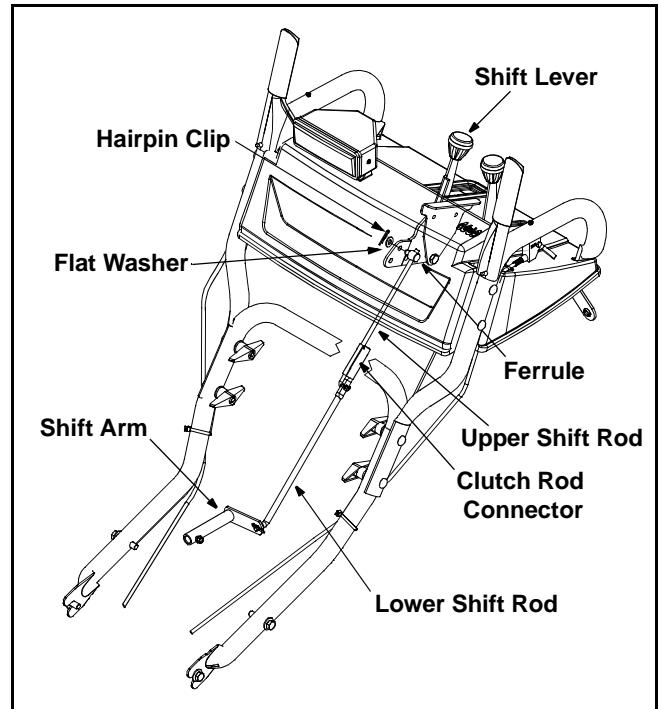
To adjust the shift rod, proceed as follows:

- Remove the hairpin clip and flat washer from the shift handle under the handle panel.
- Place shift lever in sixth (6) position or fastest forward speed.
- Push shift arm assembly down as far as it will go.
- Rotate the ferrule up or down on the shift rod as

necessary until the ferrule lines up with the upper hole in the shift lever. See Figure 11.

- Insert ferrule from the left side of the snow thrower into the upper hole.
- Reinstall the hairpin clip and the washer.

**IMPORTANT:** Make certain to check for correct adjustment of the shift rod as instructed under Final Adjustments in the Assembly Section, before operating the snow thrower.



**Figure 11**

## Skid Shoe Adjustment

The space between the shave plate and the ground can be adjusted by raising or lowering the skid shoes. Refer to Skid Shoe Adjustment in the Assembly Section.

## Auger Control Adjustment

Refer to the information found under Final Adjustments in the Assembly Section to adjust the auger control.

## Chute Assembly

The distance snow is thrown can be adjusted by adjusting the angle of the chute assembly. Refer to the "Know Your Snow Thrower" section.

The remote chute control cables have been pre-adjusted at the factory. Move the remote chute lever on the control panel back and forward to adjust angle of the chute assembly.

## SECTION 6: MAINTAINING YOUR SNOW THROWER



**WARNING:** Before lubricating, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.

### General Recommendations

- Always observe safety rules when performing any maintenance.
- The warranty on this snow thrower does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, operator must maintain the snow thrower as instructed in this manual.
- Some adjustments will have to be made periodically to maintain your unit properly.
- All adjustments in the service and adjustments sections of this manual should be checked at least once each season.
- Follow the maintenance schedule given below.
- Periodically check all fasteners and hardware to make sure these are tight.

### Carburetor



**WARNING:** If any adjustments are made to the engine while the engine is running (e.g. carburetor), keep clear of all moving parts. Be careful of heated surfaces and mufflers.

Minor carburetor adjustments may be required to compensate for differences in fuel temperature, altitude and load. Refer to the engine manual for instructions.

### Lubrication

#### Gear Shaft

Lubricate the gear shaft with 6-in-1 grease (part number 737-0170) at least once a season, or after every 25 hours of operation. Refer to Figure 10.

**IMPORTANT:** Keep all grease and oil off the rubber friction wheel and drive plate.

#### Engine

Refer to the separate engine manual packed with your unit for all engine lubrication instructions.

#### Auger Shaft

- At least once a season, remove the shear bolts from the auger shaft and spray lubricant inside the shaft. See Figure 12.

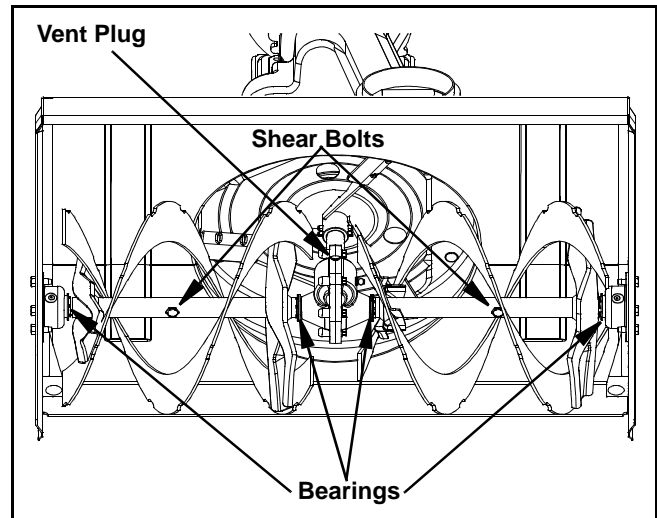


Figure 12

#### Discharge Chute

The base of the discharge chute and the spirals on the chute crank should be lubricated at least every 25 hours of use. Apply the lubricant under the base of the chute and where the spirals contact the discharge chute. See Figure 13.

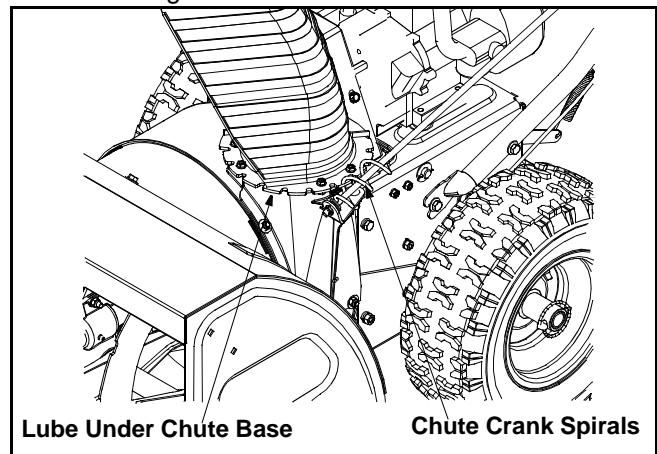


Figure 13

#### Drive and Shifting Mechanism

At least once a season or after every 25 hours of operation, remove rear cover. Lubricate any chains, sprockets, gears, bearings, shafts, and the shifting mechanism at least once a season. Use engine oil or a spray lubricant. Avoid getting oil on rubber friction wheel and aluminum drive plate. Refer to Figure 10.

#### Gear Case

The gear case is lubricated with grease at the factory and it does not require checking. If disassembled for any reason, lubricate with 2 ounces of Shell Alvania grease EPR00, part number 737-0168. Before reassembling, remove old sealant and apply new sealant. See Figure 12.

**IMPORTANT:** Do not overfill the gear case, since damage to the seals could result. Be sure the vent plug is free of grease in order to relieve pressure.

### Auger Bearings and Shaft

Every season lubricate the auger bearings and the bearings on the side of the frame with light oil. See to Figure 12.

Use oil or spray lubricant into the bearings at the wheels at least once a season. Remove the wheels, one side at a time, and clean and coat axles with multi-purpose automotive grease.

Lubricate the auger shaft at least once a season. To do this:

- Remove the shear bolts on the auger shaft.
- Oil or spray lubricant inside shaft.
- Carefully spin the auger around by hand to disperse the lubricant.
- Reinstall the shear bolts.

### Check Friction Wheel Rubber

Follow the instructions below to check the condition of the friction wheel rubber every 25 hours of operation.

- Remove the six self-tapping screws from the frame cover underneath the snow thrower.
- Visually inspect the friction wheel rubber for excessive wear, cracks, or loose fit on the friction wheel drive hub.
- Also engage the traction control and check if the friction wheel is making contact with the friction plate.
- If it does not make contact, adjust the traction drive cable following instructions and recheck the friction wheel.
- Replace friction wheel rubber if necessary. Refer to instructions in Service Section.

### Check V-Belts

Follow the instructions below to check the condition of the drive belts every 50 hours of operation.

- Remove the plastic belt cover on the front of the engine by removing the three self-tapping screws.
- Visually inspect for frayed, cracked, or excessively worn out belts.
- Replace belts as necessary as outlined in Service Section.

### Traction Control / Auger Control Lock

The cams on the ends of the control rods which interlock the traction drive and auger drive clutches must be lubricated at least once a season or every 25 hours of operation using a multi-purpose automotive grease. The cams can be accessed beneath the handle panel. See Figure 14.

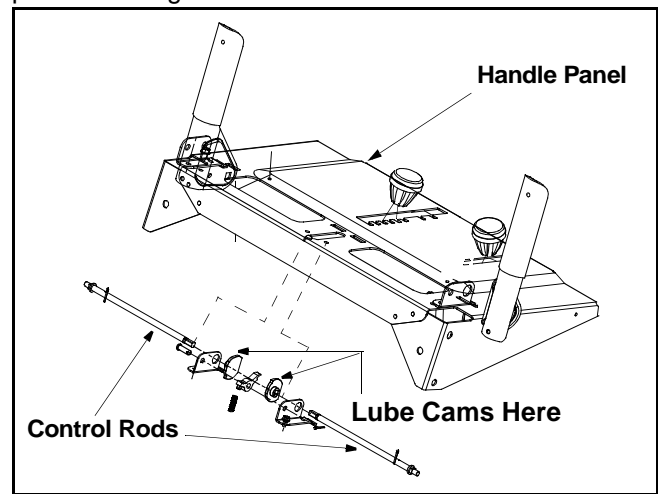


Figure 14

## SECTION 7: SERVICING YOUR SNOW THROWER



**WARNING:** Before servicing, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

### Augers

The augers are secured to the spiral shaft with two shear bolts and hex lock nuts. If you hit a foreign object or ice jam, the snow thrower is designed so that the bolts may shear. See Figure 15.

If the augers do not turn, check if the bolts have sheared. Two replacement shear bolts and hex lock

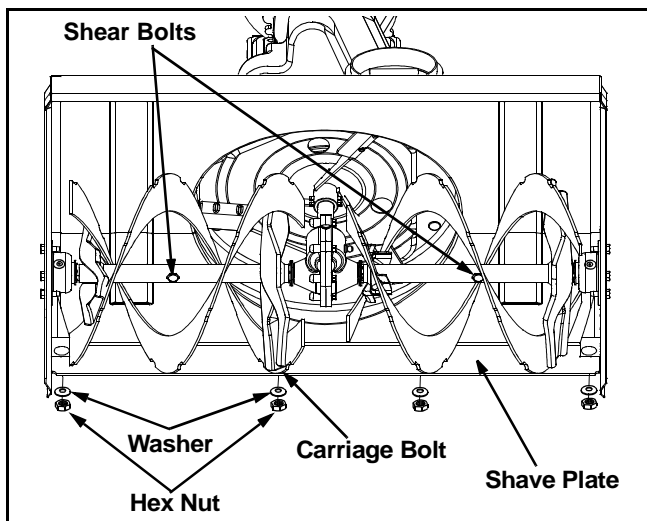
nuts have been provided with the snow thrower. Refer to Loose Parts in the Assembly Section.

**IMPORTANT:** NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components, as a result of doing so, will NOT be covered by your snow thrower's warranty.

### Shave Plate and Skid Shoes

The shave plate and skid shoes on the bottom of the snow thrower are subject to wear. They should be checked periodically and replaced when necessary.

**NOTE:** The skid shoes on this machine have two wear edges. When one side wears out, they can be rotated 180° to use the other edge.



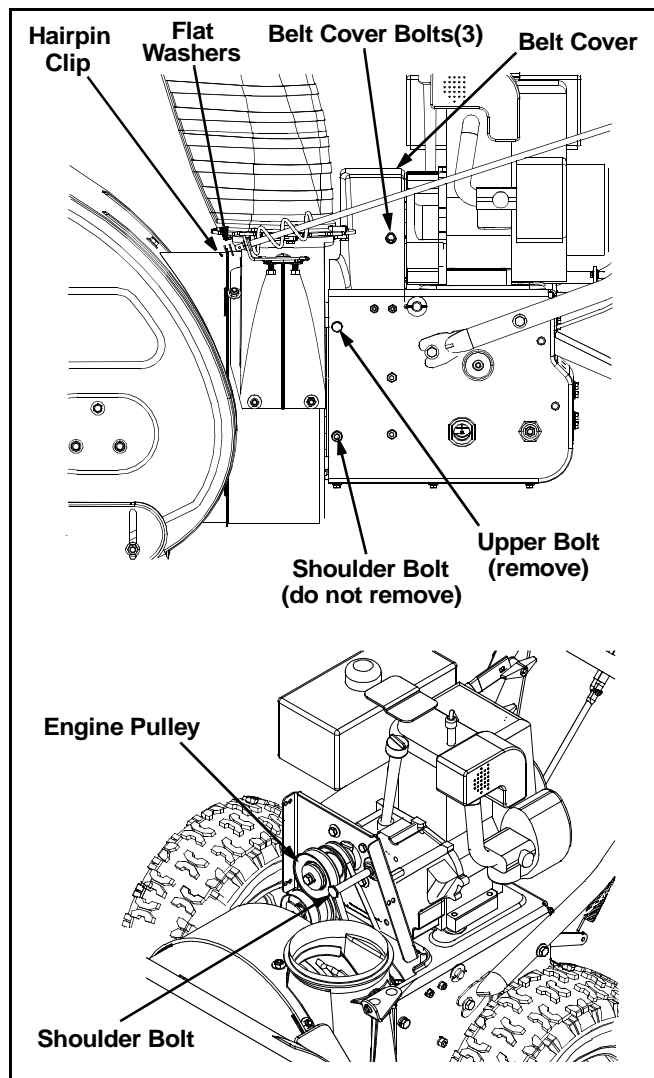
**Figure 15**

- Remove the six carriage bolts (three per side), belleville washers and hex nuts which attach slide shoes to the snow thrower on two sides. See Figure 8.
- Reassemble new slide shoes with the hardware removed earlier (cupped side of belleville washer against the slide shoes). Make certain the slide shoes are adjusted to be level.
- To remove the shave plate, remove slide shoe as well as the carriage bolts, belleville washers and hex nuts which attach shave plate to the snow thrower housing. For location of shave plate and carriage bolts, see Figure 15.
- Reassemble the new shave plate, making sure heads of carriage bolts are to the inside of the housing.
- Reinstall the skid shoes and tighten securely.

## Replacing Belts

To remove and replace either the auger belt or the drive belt, follow the steps below and then proceed to the specific steps listed under respective sub-headings.

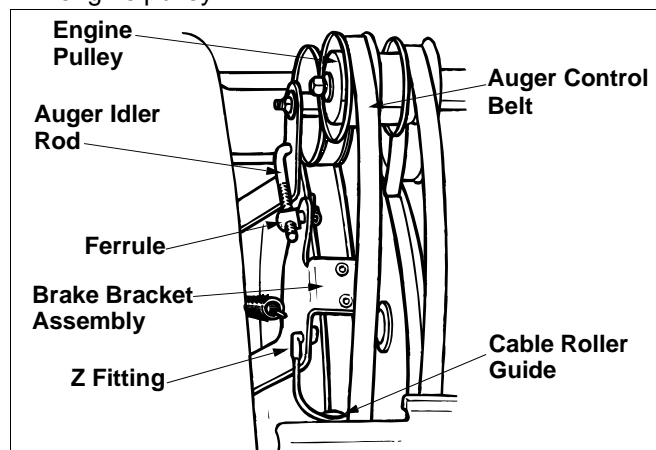
- Disconnect the chute crank assembly at the discharge chute end by removing the hairpin clip and the two flat washers.
- Remove the plastic belt cover, located near the engine, by removing the three self-tapping screws and flat washers that secure it. See Figure 16.
- Remove the large shoulder bolt and washer on the left hand side of the engine pulley. See Figure 16.



**Figure 16**

### Auger Belt

- Remove the cotter pin and washer from the ferrule in order to disconnect the auger idler rod from the brake bracket assembly. See Figure 17.
- Slip the auger control belt (the front belt) off the engine pulley.



**Figure 17**

- Pull the brake bracket assembly towards the cable guide roller and unhook the auger cable “Z” fitting.
- Remove the upper bolts and lock washers which attach the auger housing assembly to the frame assembly using a 9/16” wrench. See Figure 16.
- Separate the auger housing from the frame assembly by tilting the housing forward and pulling up the handles.
- Using a 1/2” wrench, remove the hex screw and belleville washer from the center of the pulley on the auger housing. Lift the brake bracket assembly out of the pulley groove and remove the pulley. Be careful not to lose the key. See Figure 18.

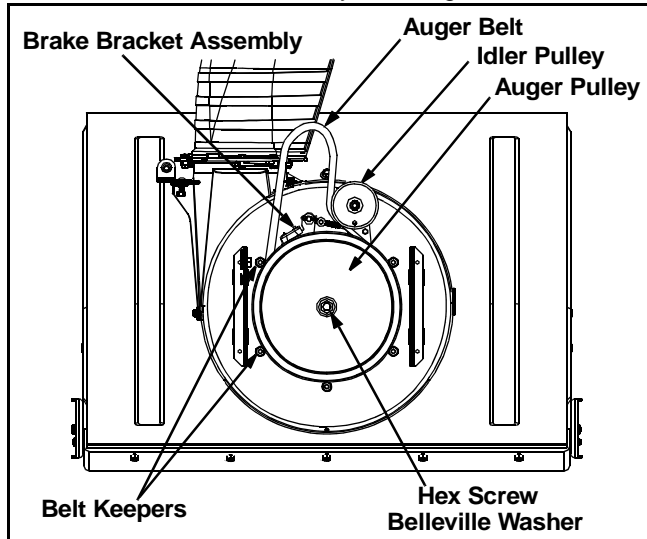


Figure 18

- Remove and replace auger belt inside belt keepers.
- Reassemble pulley to auger housing with hex screw and belleville washer (cupped side toward the pulley). Make sure key is in place on shaft and brake puck is seated in the pulley groove.
- Reassemble the belt cover and chute directional control.

**Proper Adjustment:** With the auger clutch lever in the disengaged position the top surface of the new belt should be even with the outside diameter of the pulley.

- To adjust, disconnect ferrule from brake bracket assembly and thread ferrule in (towards idler) to increase tension on belt, and out to decrease tension.

**NOTE:** The brake puck must always be firmly seated in the pulley groove when the auger control is in the disengaged position.

#### Drive Belt

- Unhook the extension spring from the belt cover plate. See Figure 19.
- Remove drive belt from the engine pulley and bottom drive pulley. Refer to Figure 19.
- Replace belt and reassemble in reverse order.
- Reassemble the two halves of the unit hooking the lower portion of the auger housing over the stationary shoulder bolts in the frame assembly.

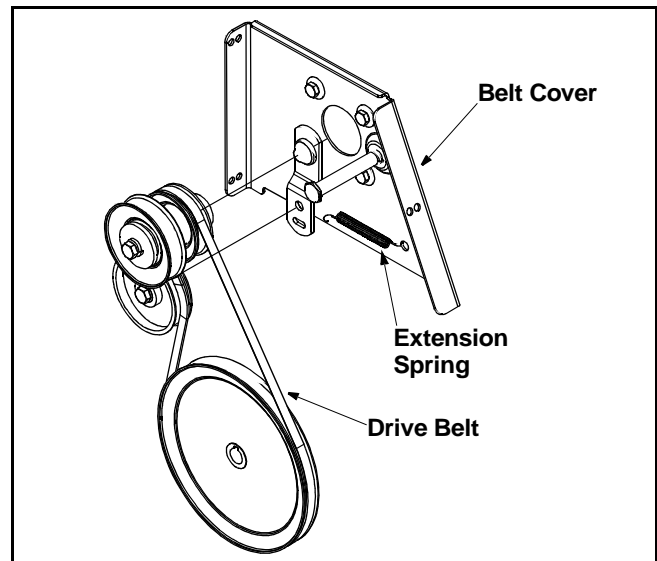


Figure 19

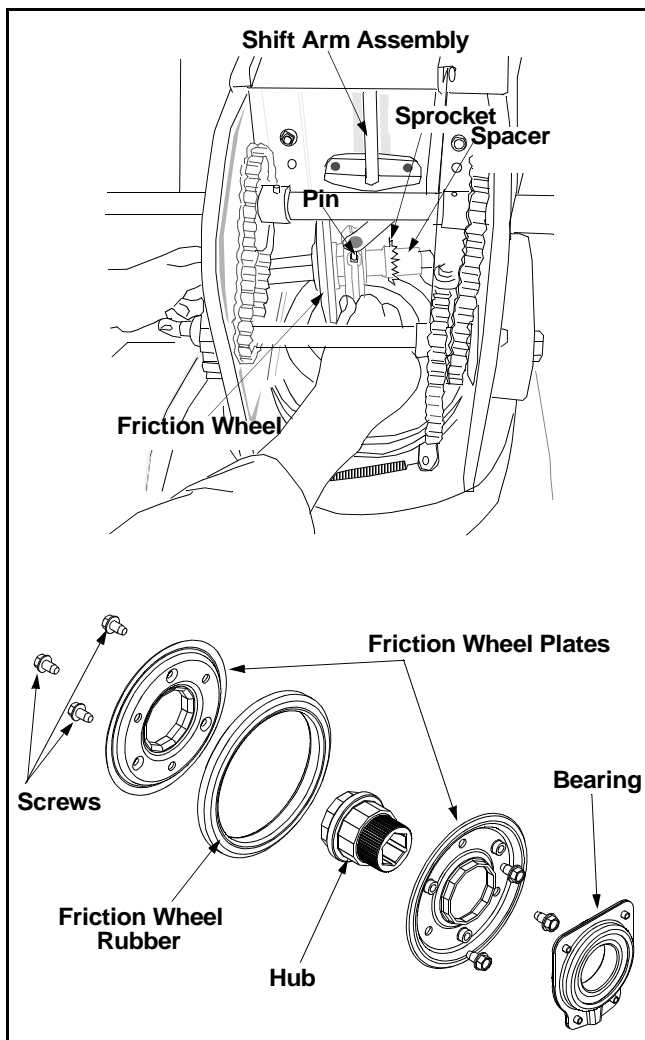
- Secure the two halves with the two bolts and lock washers removed earlier. Refer to Figure 16.
- Attach the “Z” fitting of the cable into the brake bracket assembly. Refer to Figure 17.
- Slip the auger control belt over engine pulley.
- Insert ferrule on auger idler rod into bracket assembly and secure with flat washer and cotter pin. Reassemble the large shoulder bolt and lock washer as shown in Figure 16.
- Reassemble belt cover and chute crank.

## Changing Friction Wheel Rubber

The rubber on the friction wheel is subject to wear and should be checked after the first 25 hours of operation, and periodically thereafter. Replace the friction wheel rubber if any signs of wear or cracking are found.

- Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
- Tip the snow thrower up and forward, so that it rests on the housing.
- Remove six screws from the frame cover underneath the snow thrower. Refer to Figure 10.
- Remove the left wheel from the axle.
- Using a 7/8” wrench, hold the hex shaft and remove the hex bolts and cupped washer and bearing from left side of the frame. See Figure 20.
- Holding the friction wheel assembly, slide the hex shaft out of the left side of the unit. The spacer on the right side of the hex shaft will fall and the sprocket should remain hanging loose in the chain.
- Lift the friction wheel assembly out between the axle shaft and the drive shaft assemblies.
- Remove the six screws from both sides of the friction wheel assembly and remove friction wheel rubber from between the friction wheel plate. See Figure 20.



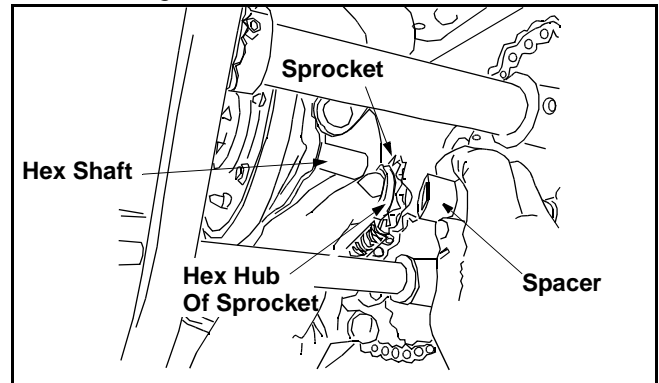


**Figure 20**

- Reassemble the new friction wheel rubber to the friction wheel assembly, tightening the six screws in rotation and with equal force. It is important to assemble the rubber on the friction wheel symmetrically for proper functioning.

- Insert the pin from the shift arm assembly into the friction wheel assembly and hold assembly in position. See Figure 20.
- Slide the hex shaft through the left side of the housing and through the friction wheel assembly.
- Insert the hex shaft through the sprocket and the spacer. Make certain that the chain engages both the large and the small sprocket.

**NOTE:** If the sprocket fell from the snow thrower while removing the hex shaft, place the sprocket on the hex shaft. Position the hex hub of the sprocket toward the friction wheel when sliding the sprocket on to the hex shaft. See Figure 21.



**Figure 21**

- Secure with the bell washer and hex bolt removed earlier.
- Secure the frame cover with six self-tapping screws. Put the snow thrower down to its normal operating position.

**NOTE:** If you placed plastic film under the gas cap, be certain to remove it.

## Engine

Refer to separate engine manual for all engine maintenance procedures.

## SECTION 8: OFF-SEASON STORAGE



**WARNING:** Never store engine with fuel in tank indoors or in poorly ventilated areas, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer or other gas appliance.

- If unit is to be stored over 30 days, prepare engine for storage as instructed in the engine manual.
- Remove all debris from the exterior of equipment.
- Follow lubrication recommendations on page 12.
- Always store the snow thrower in a clean, dry area.

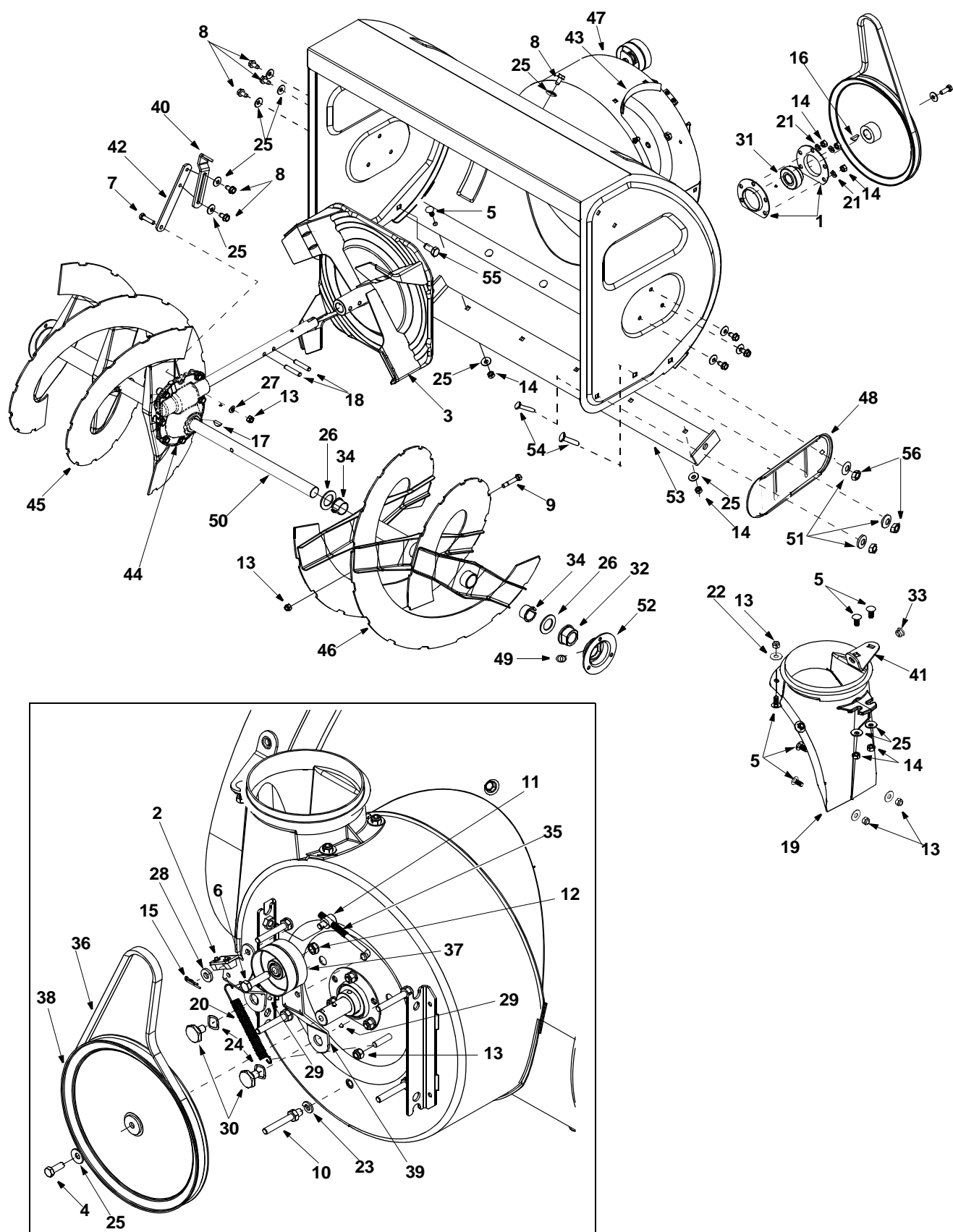
**NOTE:** When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust proof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.

## SECTION 9: TROUBLESHOOTING

Problem	Cause	Remedy
Engine fails to start.	<ol style="list-style-type: none"> <li>1. Fuel tank empty, or stale fuel.</li> <li>2. Blocked fuel line.</li> <li>3. Choke not in ON position</li> <li>4. Faulty spark plug.</li> <li>5. Safety key not in ignition switch on engine.</li> <li>6. Spark plug wire disconnected.</li> <li>7. Primer button not being used properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill tank with fresh gasoline.</li> <li>2. Clean the fuel line.</li> <li>3. Move switch to ON position</li> <li>4. Clean, adjust gap or replace.</li> <li>5. Insert the key fully into the switch.</li> <li>6. Connect spark plug wire.</li> <li>7. Refer to the engine manual.</li> </ol>
Engine runs erratic.	<ol style="list-style-type: none"> <li>1. Unit running on CHOKE.</li> <li>2. Blocked fuel line or stale fuel.</li> <li>3. Water or dirt in fuel system.</li> <li>4. Carburetor out of adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Move choke lever to OFF position.</li> <li>2. Clean fuel line and fill tank with clean, fresh gasoline.</li> <li>3. Drain fuel tank and carburetor. Refill with fresh fuel.</li> <li>4. Refer to the engine manual.</li> </ol>
Loss of power.	<ol style="list-style-type: none"> <li>1. Spark plug wire loose.</li> <li>2. Gas cap vent hole plugged.</li> <li>3. Exhaust port plugged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect and tighten spark plug wire.</li> <li>2. Remove ice and snow from gas cap. Be certain vent hole is clear.</li> <li>3. Refer to the engine manual.</li> </ol>
Engine overheats.	<ol style="list-style-type: none"> <li>1. Carburetor not adjusted properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to the engine manual or have the carburetor adjusted by an authorized engine service dealer.</li> </ol>
Excessive vibration.	<ol style="list-style-type: none"> <li>1. Loose parts or damaged auger.</li> </ol>	<ol style="list-style-type: none"> <li>1. Stop engine immediately and disconnect spark plug wire. Tighten all bolts and nuts. If vibration continues, have unit serviced by an authorized service dealer.</li> </ol>
Unit fails to propel itself.	<ol style="list-style-type: none"> <li>1. Traction control cable in need of adjustment.</li> <li>2. Drive belt loose or damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust traction control cable. Refer to Adjustments.</li> <li>2. Replace drive belt.</li> </ol>
Unit fails to discharge snow.	<ol style="list-style-type: none"> <li>1. Discharge chute clogged.</li> <li>2. Foreign object lodged in auger.</li> <li>3. Auger control cable in need of adjustment.</li> <li>4. Auger belt loose or damaged.</li> <li>5. Shear bolt(s) sheared.</li> </ol>	<ol style="list-style-type: none"> <li>1. Stop engine immediately and disconnect spark plug wire. Clean discharge chute and inside of auger housing.</li> <li>2. Stop engine immediately and disconnect spark plug wire. Remove object from auger.</li> <li>3. Refer to Final Adjustments in Assembly Section.</li> <li>4. Refer to Adjustments.</li> <li>5. Replace shear bolt(s).</li> </ol>

**NOTE:** For repairs beyond the minor adjustments listed above, contact the local dealer.

# Model 31AE993I401



## Model 31AE993I401

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	05244A	Bearing Housing	30.	738-0281	Shoulder Screw
2.	618-0281A	Bracket Assembly: Auger Break	31.	741-0185	Self-Aligning Bearing
3.	684-0090A	Impeller Assembly: 16"	32.	741-0192	Flange Bearing w/ Flats
4.	710-0371	Hex Lock Bolt 5/16-18 x .875"	33.	741-0475	Plastic Bushing
5.	710-0451	Carriage Bolt 5/16-18 x .750"	34.	741-0494	Flange Bushing
6.	710-0459A	Hex Screw, Special 3/8-24 x 1.5"	35.	747-0980	Idler Rod: Auger
7.	710-0528	Hex Screw 5/16-18 x 1.25"	36.	754-0222	V-Belt
8.	710-0604A	Self-Tapp. Screw 5/16-18 x .625"	37.	756-0178	Flat Idler
9.	710-0891	Shear Bolt 5/16-18 x 1.75"	38.	756-0243	Pulley
10.	711-0640	Stud	39.	784-0385A	Idler Bracket: Auger
11.	711-0677	Ferrule	40.	784-5076	Support Bracket
12.	712-0116	Jam Nut 3/8-24	41.	784-5123	Chute Crank Bracket
13.	712-0429	Hex Lock Nut 5/16-18	42.	784-5710	Support Plate
14.	712-3010	Hex Nut 5/16-18	43.	784-5711	Chute Bracket
15.	714-0104	Hairpin Clip	44.	618-0436	Gear Assembly
16.	714-0126	Key	45.	705-5210A	Spiral Assembly RH
17.	714-0135	Key	46.	705-5211A	Spiral Assembly LH
18.	715-0118	Spiral Pin	47.	684-0093A	Auger Housing Assembly
19.	731-1696	Chute Adapter	48.	784-5697	Slide Shoe
20.	732-0858	Extension Spring	49.	737-3000	Lube Fitting
21.	736-0119	Lock Washer	50.	738-0491	Spiral Axle
22.	736-0159	5/16 Washer	51.	736-0105	Bell Washer
23.	736-0169	Lock Washer	52.	784-0315	Bearing Housing
24.	736-0174	Wave Washer	53.	784-5714	Shave Plate
25.	736-0242	Beleville Washer	54.	710-0389	Carriage Screw
26.	736-0250	Flat Washer	55.	710-3168	Carriage Bolt
27.	736-0271	Spring Washer	56.	712-0798	Hex Nut 3/8-16
28.	736-3008	Flat Washer			

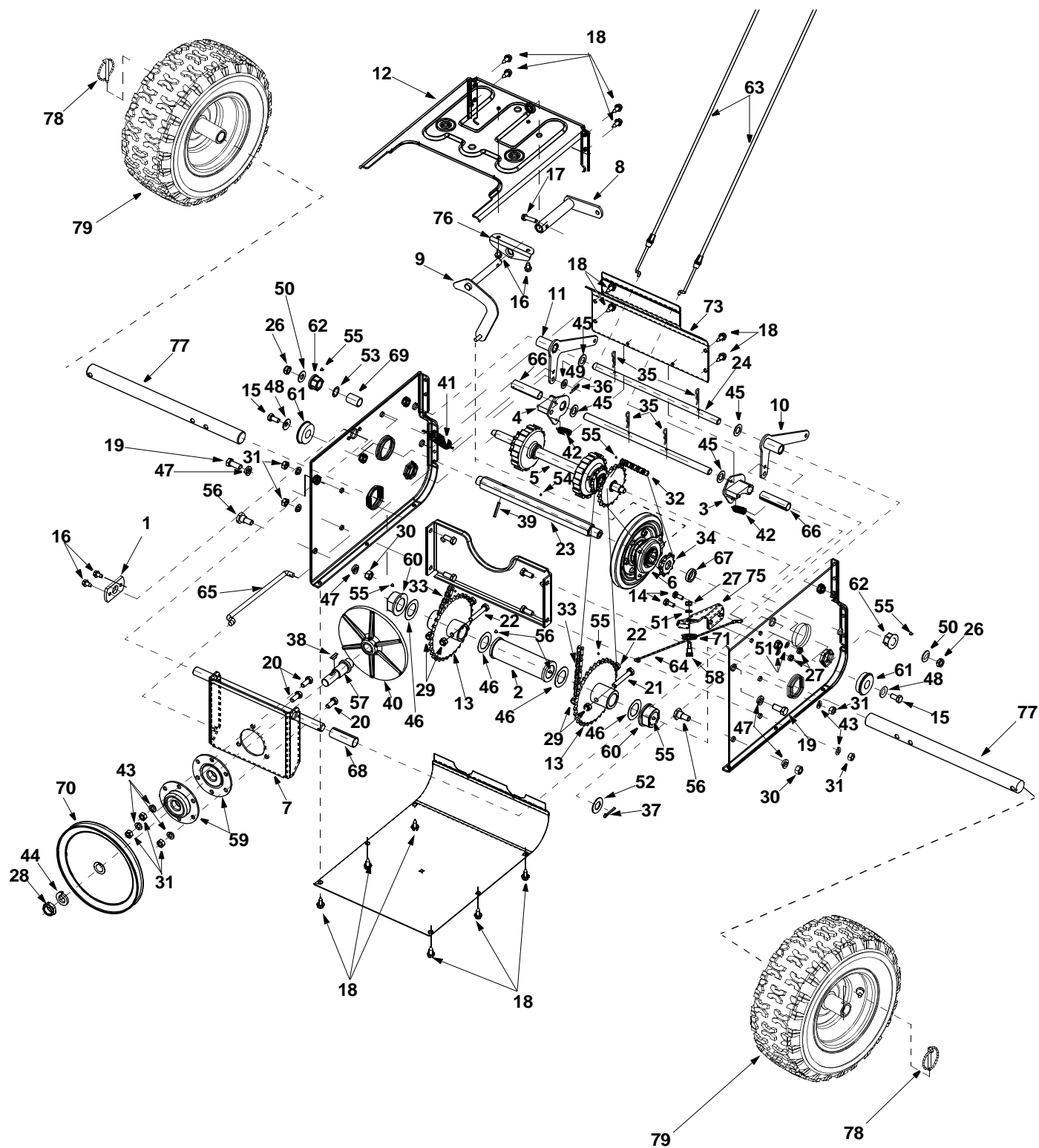
**NOTE:** For **painted parts**, please refer to the list of color codes below. Please add the applicable color code, wherever needed, to the part number to order a replacement part. For instance, if a part numbered 700-sextets is painted Yard-Man Green, the part number to order would be 700-sextets-0665.

Yard-Man Green: 0665

Yard-Man Yellow: 0674

Powder Black: 0637

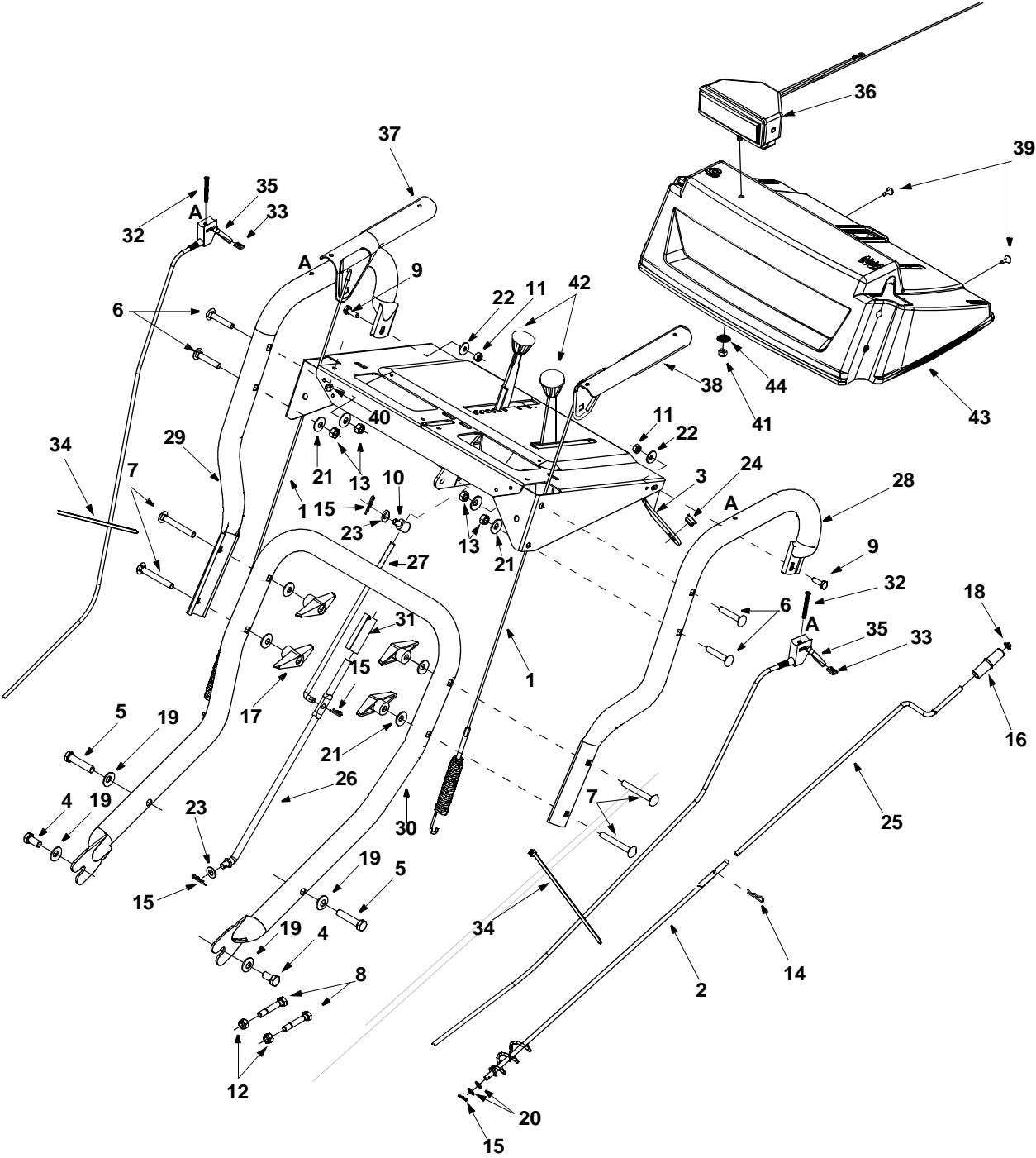
Model 31AE993I401



## Model 31AE993I401

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	05523	Support Bracket: Pivot	41.	732-0121	Extension Spring
2.	618-0278	Bush Assembly	42.	732-0209	Extension Spring
3.	618-0279	Dogg Assembly LH	43.	736-0119	Lock Washer 5/16
4.	618-0280	Dogg Assembly RH	44.	736-0158	Lock Washer 5/8
5.	618-0282B	Shift Assembly	45.	736-0160	Flat Washer
6.	618-0296	Wheel Bearing Assembly	46.	736-0163	Flat Washer
7.	684-0115	Support Bracket Assembly	47.	736-0217	Lock Washer
8.	684-0116	Shift Arm Assembly	48.	736-0242	Beleville Washer
9.	684-0117	Shift Rod Assembly	49.	736-0275	Flat Washer
10.	684-0118	Auger Actuator Bracket Assy.	50.	736-0300	Flat Washer
11.	684-0119	Drive Actuator Bracket Assy.	51.	736-0329	Lock Washer
12.	684-0120	Frame Assembly	52.	736-0623	Flat Washer
13.	684-0122	Sprocket Assembly	53.	736-0639	Flat Washer
14.	710-0195	Hex Screw 1/4-28 x .625"	54.	737-0170	Lubricant
15.	710-0538	Hex Screw 5/16-18 x .625"	55.	737-3007	Grease
16.	710-0599	TT Screw 1/4-20 x .5"	56.	738-0143	Shoulder Screw
17.	710-0788	TT Screw 1/4-20 x 1"	57.	738-0279	Spindle: Drive Plate
18.	710-1652	TT Screw 1/4-20 x .625"	58.	738-0924	Shoulder Screw 1/4-28 x .375"
19.	710-3001	Hex Screw 3/8-16 x .880"	59.	741-0163A	Bearing Housing Assembly
20.	710-3008	Hex Screw 5/16-18 x .75"	60.	741-0192	Flange Bearing
21.	710-3103	Hex Screw 5/16-18 x 2"	61.	741-0563	Ball Bearing
22.	710-3180	Hex Screw 5/16-18 x 1.75"	62.	741-1111	Hex Flange Bearing
23.	711-1191	Hex Shaft: Drive	63.	746-0949	Steer Cable
24.	711-1193	Actuator Shaft	64.	746-0951	Idler Cable: Auger
25.	711-1194	Actuator Drive Shaft	65.	747-0973	Clutch Rod: Drive
26.	712-0116	Lock Nut	66.	750-0903	Split Spacer
27.	712-0138	Hex Nut 1/4-28	67.	750-0997	Spacer
28.	712-0221	Jam Lock Nut	68.	750-1097	Split Spacer
29.	712-0429	Hex Lock Nut	69.	750-1196	Spacer
30.	712-0798	Hex Nut 3/8-16	70.	756-0344	Drive Pulley
31.	712-3010	Hex Nut 5/16-18	71.	756-0625	Roller Cable
32.	713-0284	Chain	72.	784-0377	Frame Support Bracket
33.	713-0286	Chain	73.	784-0379	Frame Cover: Upper
34.	713-0413	Sprocket	74.	784-0380	Frame Cover: Lower
35.	714-0101	Hairpin Clip	75.	784-0384	Auger Cable Bracket
36.	714-0104	Hairpin Clip	76.	784-5590	Bracket: Shift — Frame
37.	714-0115	Cotter Pin	77.	738-0975	Axle: Wheel
38.	714-0388	Key	78.	714-0151A	Klik Pin
39.	715-0249	Roll Pin	79.	734-1593	Wheel
40.	717-0302	Drive Plate			

Model 31AE993I401





## Model 31AE993I401

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	646-0012	Cable Assembly: Auger/Drive	28.	749-0989A	Upper Handle LH
2.	684-0053B	Chute Crank Assembly	29.	749-0990A	Upper Handle RH
3.	705-5266	Chute Crank Bracket	30.	749-0991	Lower Handle
4.	710-3119	Hex Screw 3/8-16 x .75"	31.	750-0963	Clutch Rod Connector
5.	710-1878	Hex Screw 3/8-16 x 1.75"	32.	710-1625	Oval C-Sunk Screw
6.	710-0458	Carriage Bolt 5/16-18 x 1.75"	33.	712-0127	Flat Weld Nut
7.	710-0572	Carriage Bolt 5/16-18 x 2.5"	34.	725-0157	Cable Tie
8.	710-0891	Shear Bolt 5/16-18 x 1.75"	35.	746-0950	Trigger Control
9.	710-3015	Hex Screw 1/4-20 x .75"	36.	625-0007	Light Assembly
10.	711-0677	Ferrule		725-1658	Halogen Lamp
11.	712-0287	Hex Nut 1/4-20		725-1672	Lens Assembly
12.	712-0429	Hex Lock Nut	37.	705-5218	Handle Engagement RH
13.	712-3010	Hex Nut	38.	705-5219	Handle Engagement LH
14.	714-0101	Hairpin Clip	39.	710-1003	Special B Screw
15.	714-0104	Hairpin Clip	40.	712-0271	Hex Sems Nut
16.	720-0201A	Chute Crank Knob	41.	712-0429	Hex Lock Nut
17.	720-0284	Knob	42.	720-0232	Shift Knob
18.	726-0100	Push Cap	43.	731-0061	Handle Panel
19.	736-0105	Bell Washer	44.	736-0159	5/16 Washer
20.	736-0185	Flat Washer		777D00133	Label: Front Handle Panel
21.	736-0242	Beleville Washer		777D00179	Label: Yard Man Sides
22.	736-0270	Bell Washer		777D05319	Label: Auger 13/33
23.	736-0275	Flat Washer		777I20412	Label: Panel Steering RH
24.	741-0475	Plastic Bushing		777I20747	Label: Panel Steering LH
25.	747-0624	Chute Crank		777S30511	Label: Chute Danger
26.	747-0983	Lower Shift Rod		777S30514	Label: Housing Danger
27.	747-0997	Upper Shift Rod			

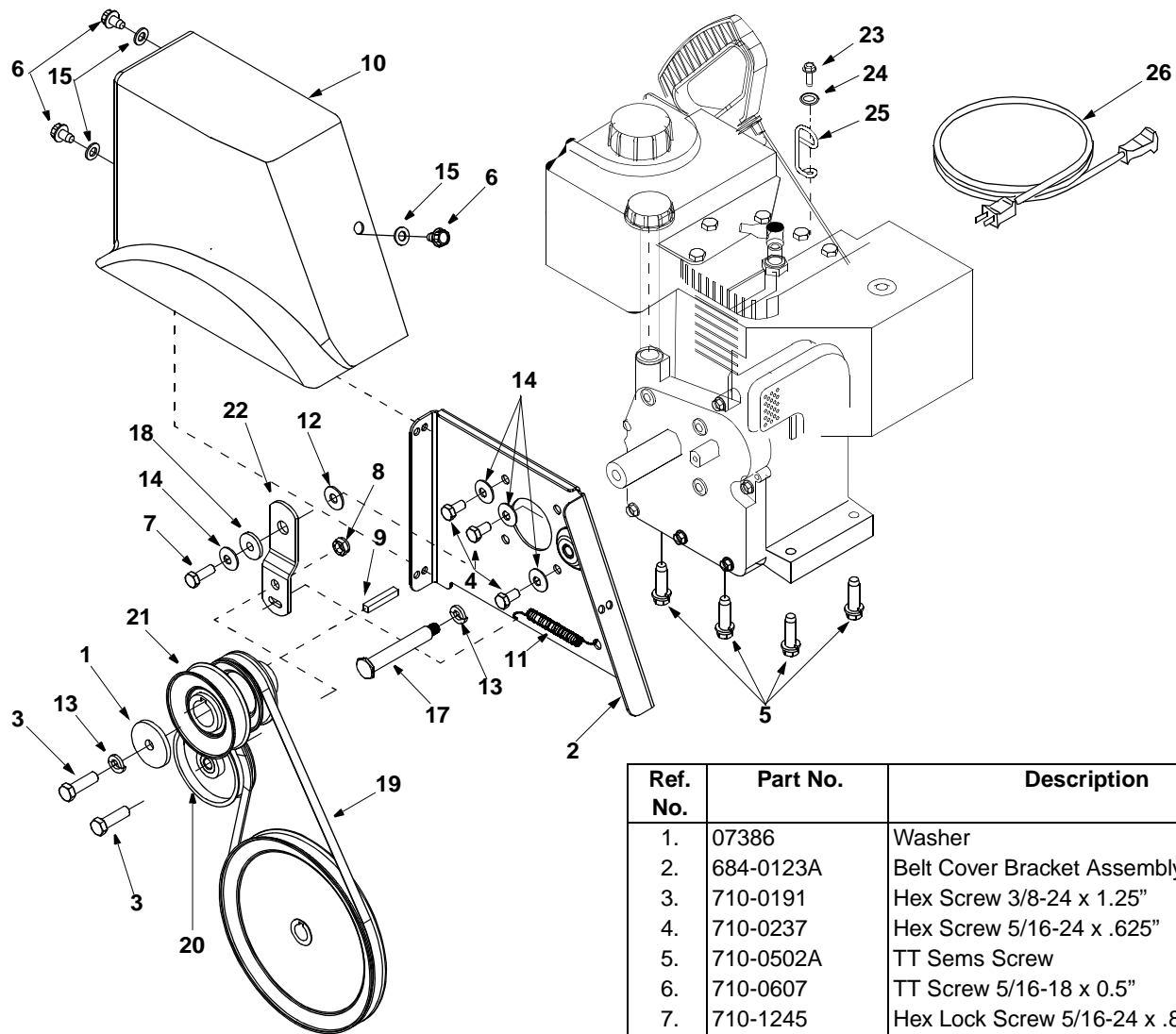
**NOTE:** For **painted parts**, please refer to the list of color codes below. Please add the applicable color code, wherever needed, to the part number to order a replacement part. For instance, if a part numbered 700-sextets is painted Yard-Man Green, the part number to order would be 700-sextets-0665.

Yard-Man Green: 0665

Yard-Man Yellow: 0674

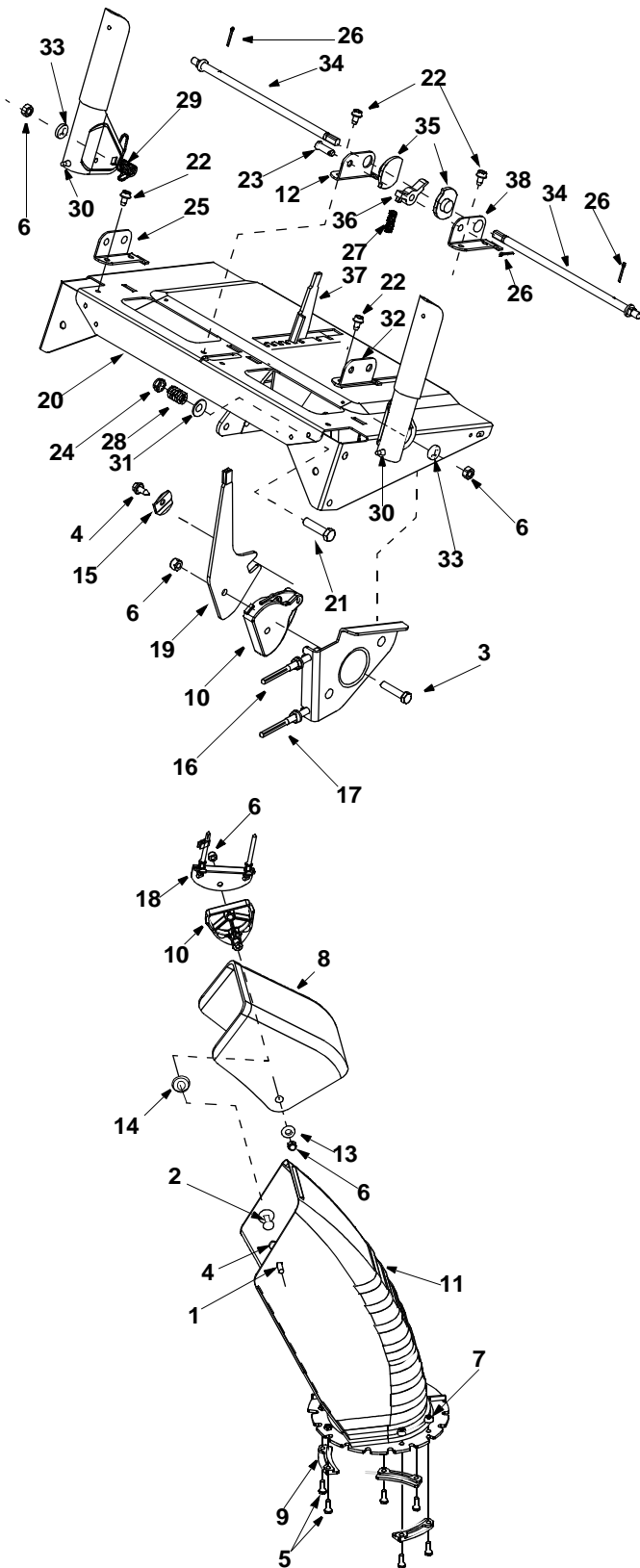
Powder Black: 0637

# Model 31AE993I401



Ref. No.	Part No.	Description
1.	07386	Washer
2.	684-0123A	Belt Cover Bracket Assembly
3.	710-0191	Hex Screw 3/8-24 x 1.25"
4.	710-0237	Hex Screw 5/16-24 x .625"
5.	710-0502A	TT Sems Screw
6.	710-0607	TT Screw 5/16-18 x 0.5"
7.	710-1245	Hex Lock Screw 5/16-24 x .875"
8.	712-0116	Jam Nut
9.	714-0118	Key
10.	731-2531	Belt Cover
11.	732-0303	Extension Spring
12.	736-0159	5/16 Washer
13.	736-0217	Lock Washer
14.	736-0242	Beleville Washer
15.	736-0264	Flat Washer
17.	738-0215A	Shoulder Screw
18.	748-0234	Shoulder Spacer
19.	754-0131	V-Belt
20.	756-0240	Flat Idler
21.	756-0241B	Double Pulley
22.	784-5726	Idler Bracket
23.	712-0324	Hex Lock Nut: 1/4-20
24.	732-0705	Cable Guide
25.	736-0173	Flat Washer
26.	629-0071	Extension Cord: 110V, 3-prong

# Model 31AE993I401



Ref. No.	Part No.	Description
1.	710-0276	Carriage Screw
2.	710-0458	Carriage Bolt 5/16-18 x 1.75"
3.	710-0805	Hex Bolt 5/16-18 x 1.5"
4.	710-0896	Hex AB Screw 1/4-14 x .625"
5.	710-3015	Hex Screw 1/4-20 x .75"
6.	712-0429	Hex Lock Nut
7.	712-3027	Hex Flange Lock Nut
8.	731-0846C	Upper Chute
9.	731-0851A	Chute Flange Keeper
10.	731-1313C	Cable Guide: Chute Tilt
11.	731-0903D	Lower Chute
12.	784-5680	Handle Suppt. Bracket 5/8 RH
13.	736-0159	5/16 Washer
14.	736-0231	Flat Washer
15.	736-0506	Special Washer
16.	746-0902	Chute Control Cable
17.	746-0903	Chute Cable w/Clip
18.	784-5594	Cable Bracket
19.	784-5604	Chute Tilt Handle
20.	684-0102	Handle Panel Assembly w/ Tilt
21.	710-0459A	Hex Bolt 3/8-24 x 1.5"
22.	710-0599	TT Screw 1/4-20 x 0.5"
23.	711-0653	Clevis Pin
24.	712-0116	Jam Nut
25.	784-5682	Handle Suppt. Bracket 3/8 RH
26.	714-0104	Cotter Pin
27.	732-0145	Spring
28.	732-0193	Spring
29.	732-0746	Torsion Spring
30.	735-0199A	Rubber Bumper
31.	736-0105	Bell Washer
32.	784-5681	Handle Suppt. Bracket 3/8 LH
33.	736-0509	Special Washer
34.	747-0877	Cam Rod
35.	748-0362	Cam: Handle Lock
36.	748-0363	Pawl: Handle Lock
37.	784-5619A	Shift Handle
38.	784-5679	Handle Suppt. Bracket 5/8 LH

## Notes



# MANUFACTURER'S LIMITED WARRANTY FOR:



The limited warranty set forth below is given by MTD PRODUCTS INC ("MTD") with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD Products Inc. for use with the product(s) covered by this manual will void your warranty as to any resulting damages.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear part or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires. Batteries are covered by a 90-day limited replacement warranty.

**HOW TO OBTAIN SERVICE:** Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD PRODUCTS INC by calling 1-800-800-7310 or writing to P.O. Box 368022, Cleveland, Ohio 44136-9722.

**This limited warranty does not provide coverage in the following cases:**

- a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Please refer to the applicable manufacturer's warranty on these items.
- b. Log splitter pumps, valves and cylinders have a separate one year warranty.

c. Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.

d. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

**No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above.** (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

**The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product.** (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

**How State Law Relates to this Warranty:** This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.